

CLAIMS

What is claimed is:

1 1. A method of responding to a request for data from a server operated by an enterprise
2 on a network, the request based on an enterprise-specific vocabulary of names and
3 relationships among the names, the names naming enterprise products and services and
4 activities and data, the method comprising the steps of:

5 generating and storing a first concept in association with a first relationship of a first
6 relationship type and a second relationship of a second relationship type; and
7 responding to the request based on the first concept and the second relationship,

8 wherein,

9 the first concept is one of a plurality of atomic concepts among names in the
10 enterprise-specific vocabulary,

11 the first concept is associated with a first category of a plurality of categories
12 that encompass the enterprise-specific vocabulary;

13 the first relationship type relates at least two concepts of the plurality of
14 atomic concepts associated with the first category, and

15 the second relationship type relates at least one of the two concepts related by
16 the first relationship with at least one different concept of the plurality
17 of atomic concepts.

1 2. A method of responding to a request for data from a server operated by an enterprise,
2 the server managing data comprising a plurality of categories of information, the request
3 based on a value in a first category of the plurality of categories, the data requested belonging
4 to a second category of the plurality of categories, the method comprising the steps of:

5 generating and storing a first concept in association with a first relationship of a first
6 relationship type and a second relationship of a second relationship type; and
7 responding to the request based on the first concept and the second relationship,
8 wherein,

9 the first concept is one of a plurality of atomic concepts among the data
10 managed by the server,
11 the first concept is associated with the first category of the plurality of
12 categories;
13 the first relationship type relates at least two concepts of the plurality of
14 atomic concepts associated with the first category, and
15 the second relationship type relates at least one of the two concepts related by
16 the first relationship with at least one concept of the plurality of atomic
17 concepts associated with the second category of the plurality of
18 categories.

1 3. A method as recited in Claim 2, wherein:
2 the first category is one of a products category, a services category, an activities
3 category and a document category; and
4 the second category is a different one of the products category, the services category,
5 the activities category and the document category.

1 4. A method of processing enterprise data generated by an enterprise, the method
2 comprising the step of:
3 generating and storing a first concept in association with a first relationship of a first
4 relationship type and a second relationship of a second relationship type,
5 wherein,
6 the first concept is one of a plurality of atomic concepts within the enterprise
7 data,
8 the first concept is associated with a first category of a plurality of categories
9 that encompass the enterprise data;
10 the first relationship type relates at least two concepts of the plurality of
11 atomic concepts associated with the first category, and
12 the second relationship type relates at least one of the two concepts related by
13 the first relationship with at least one different concept of the plurality
14 of atomic concepts.

1 5. A method as recited in Claim 4, further comprising the step of processing some data
2 of the enterprise data based on the first concept and the second relationship.

1 6. A method as recited in Claim 4, wherein the second relationship type relates a number
2 of concepts of the plurality of atomic concepts associated with the first category that differs
3 in number from the at least two concepts.

1 7. A method as recited in Claim 4, wherein the second relationship type relates at least
2 one concept of the plurality of atomic concepts associated with the first category to at least
3 another concept of the plurality of atomic concepts associated with a second category of the
4 plurality of categories.

1 8. The method as recited in Claim 4, wherein concepts in the first category are
2 represented as nodes connected by relationships of the first relationship type along one or
3 more branches of a first type hierarchy to a first root node representing a first root concept for
4 the first category:

1 9. The method as recited in Claim 8, wherein the first root node has a "child of"
2 relationship to an enterprise data root node representing an enterprise data root concept.

1 10. The method as recited in Claim 9, wherein a second root node corresponding to a
2 second root concept for a second category of the plurality of categories has a "child of"
3 relationship to the enterprise data root node.

1 11. The method as recited in Claim 4, wherein an association among the first concept and
2 the first relationship and the second relationship is provided by a relational database.

1 12. The method as recited in Claim 4, wherein the first concept is stored as a record in a
2 first data store table, said record including a concept name field for storing a name of the first
3 concept.

1 13. The method as recited in Claim 12, wherein every record in the first data store table
2 stores a name of a concept of the plurality of atomic concepts associated with the first
3 category.

1 14. The method as recited in Claim 4, wherein the first relationship is stored as a first
2 unique record in a relationship data store table, said first unique record including a
3 relationship type field for storing a name of the first relationship type.

1 15. The method as recited in Claim 14, wherein a name of the first concept is stored in a
2 participant field in a record in a relationship participant data store table, said record including
3 a relationship identification field for storing data indicating the first unique record in the
4 relationship data store table.

1 16. The method as recited in Claim 14, wherein the second relationship is stored as a
2 second unique record in the relationship data store table, said second unique record storing a
3 name of the second relationship type in the relationship type field.

1 17. The method as recited in Claim 16, wherein a name of the first concept is stored in a
2 participant field in a first record in a relationship participant data store table, said first record
3 including a relationship identification field for storing data indicating the second unique
4 record in the relationship data store table.

1 18. The method as recited in Claim 16, wherein a name of the first concept is stored in a
2 participant field in a first record in a relationship participant data store table, said first record
3 including a relationship identification field for storing data indicating the first unique record
4 in the relationship data store table.

1 19. The method as recited in Claim 18, wherein the name of the first concept is stored in
2 the participant field in a second record in the relationship participant data store table, said
3 second record storing data in the relationship identification field for indicating the second
4 unique record in the relationship data store table.

1 20. The method as recited in Claim 15, wherein a name of a role for the first concept is
2 stored in a role field in the record in the relationship participant data store table.

1 21. The method as recited in Claim 4, wherein one or more attributes of at least one of the
2 first concept and the first relationship and the second relationship are stored in an attributes
3 data store table.

1 22. The method as recited in Claim 4, further comprising generating and storing a rule
2 associated with at least one of the first relationship type and the second relationship type and
3 a category of the plurality of categories.

1 23. The method as recited in Claim 22, wherein the rule constrains a second concept
2 which may be related to the first concept by the at least one of the first relationship type and
3 the second relationship type.

1 24. The method as recited in Claim 22, wherein the rule is stored in a relational database
2 table.

1 25. A method of processing enterprise data generated by an enterprise, the method
2 comprising the steps of:
3 generating a plurality of categories that encompass the enterprise data;
4 generating a plurality of atomic concepts within the enterprise data;
5 generating a first relationship type to relate at least two concepts of the plurality of
6 atomic concepts associated with a first category of the plurality of categories;
7 generating a second relationship type to relate at least one of the at least two concepts
8 related by the first relationship type to at least one different concept of the
9 plurality of atomic concepts;
10 storing a first concept of the plurality of atomic concepts, said first concept associated
11 with the first category;
12 generating a first relationship of the first relationship type with the first concept;
13 generating a second relationship of the second relationship type with the first concept;
14 and
15 storing the first relationship and the second relationship in association with the first
16 concept.

1 26. A method as recited in Claim 25, further comprising the step of processing some data
2 of the enterprise data based on the first concept and the second relationship.

1 27. A method as recited in Claim 25, wherein the second relationship type relates a
2 number of concepts of the plurality of atomic concepts associated with the first category that
3 differs in number from the at least two concepts.

1 28. A method as recited in Claim 25, wherein the second relationship type relates at least
2 one concept of the plurality of atomic concepts associated with the first category to at least
3 another concept of the plurality of atomic concepts associated with a second category of the
4 plurality of categories.

1 29. The method as recited in Claim 25, wherein concepts in the first category are
2 represented as nodes connected by relationships of the first relationship type along one or
3 more branches of a first type hierarchy to a first root node representing a first root concept for
4 the first category:

1 30. The method as recited in Claim 29, wherein the first root node has a “child of”
2 relationship to an enterprise data root node representing an enterprise data root concept.

1 31. The method as recited in Claim 30, wherein a second root node corresponding to a
2 second root concept for a second category of the plurality of categories has a “child of”
3 relationship to the enterprise data root node.

1 32. The method as recited in Claim 25, wherein an association among the first concept
2 and the first relationship and the second relationship is provided by a relational database.

1 33. The method as recited in Claim 25, said step of storing the first concept further
2 comprising:
3 storing the first concept as a record in a first data store table; and
4 storing a name of the first concept in a concept name field in said record.

1 34. The method as recited in Claim 33, wherein every record in the first data store table
2 stores a name of a concept of the plurality of atomic concepts associated with the first
3 category.

1 35. The method as recited in Claim 25, said step of storing the first relationship and the
2 second relationship further comprising:
3 storing the first relationship as a first unique record in a relationship data store table;
4 and
5 storing a name of the first relationship type in a relationship type field in said first
6 unique record.

1 36. The method as recited in Claim 35, said step of storing the first relationship and the
2 second relationship further comprising:
3 storing a name of the first concept in a participant field in a record in a relationship
4 participant data store table; and
5 storing in a relationship identification field in said record in the relationship
6 participant data store table, data indicating the first unique record in the
7 relationship data store table.

1 37. The method as recited in Claim 35, said step of storing the first relationship and the
2 second relationship further comprising:
3 storing the second relationship as a second unique record in the relationship data store
4 table; and
5 storing a name of the second relationship type in the relationship type field in said
6 second unique record..

1 38. The method as recited in Claim 37, said step of storing the first relationship and the
2 second relationship further comprising:
3 storing a name of the first concept in a participant field in a first record in a
4 relationship participant data store table; and
5 storing in a relationship identification field in said first record in the relationship
6 participant data store table, data indicating the second unique record in the
7 relationship data store table.

1 39. The method as recited in Claim 37, said step of storing the first relationship and the
2 second relationship further comprising:

3 storing a name of the first concept in a participant field in a first record in a
4 relationship participant data store table; and
5 storing in a relationship identification field in said first record in the relationship
6 participant data store table, data indicating the first unique record in the
7 relationship data store table.

1 40. The method as recited in Claim 39, said step of storing the first relationship and the
2 second relationship further comprising:

3 storing the name of the first concept in the participant field in a second record in the
4 relationship participant data store table; and
5 storing in the relationship identification field in said second record in the relationship
6 participant data store table, data indicating the second unique record in the
7 relationship data store table.

1 41. The method as recited in Claim 36, said step of storing the first relationship and the
2 second relationship further comprising storing a name of a role for the first concept in a role
3 field in the record in the relationship participant data store table.

1 42. The method as recited in Claim 25, said step of storing the first relationship and the
2 second relationship further comprising storing one or more attributes of at least one of the
3 first concept and the first relationship and the second relationship in an attributes data store
4 table.

1 43. The method as recited in Claim 25, further comprising generating and storing a rule
2 associated with at least one of the first relationship type and the second relationship type and
3 a category of the plurality of categories.

1 44. The method as recited in Claim 43, wherein the rule constrains a second concept
2 which may be related to the first concept by the at least one of the first relationship type and
3 the second relationship type.

1 45. The method as recited in Claim 43, said step of generating and storing the rule further
2 comprising storing the rule in a relational database table.

1 46. A computer-readable medium carrying one or more sequences of instructions for
2 responding to a request for data from a server operated by an enterprise on a network, the
3 request based on an enterprise-specific vocabulary of names and relationships among the
4 names, the names naming enterprise products and services and activities and data, which
5 instructions, when executed by one or more processors, cause the one or more processors to
6 carry out the steps of:

7 generating and storing a first concept in association with a first relationship of a first
8 relationship type and a second relationship of a second relationship type; and
9 responding to the request based on the first concept and the second relationship,
10 wherein,

11 the first concept is one of a plurality of atomic concepts among names in the
12 enterprise-specific vocabulary,

13 the first concept is associated with a first category of a plurality of categories
14 that encompass the enterprise-specific vocabulary;

15 the first relationship type relates at least two concepts of the plurality of
16 atomic concepts associated with the first category, and

17 the second relationship type relates at least one of the two concepts related by
18 the first relationship with at least one different concept of the plurality
19 of atomic concepts.

1 47. A computer-readable medium carrying one or more sequences of instructions for
2 responding to a request for data from a server operated by an enterprise, the server managing
3 data comprising a plurality of categories of information, the request based on a value in a first
4 category of the plurality of categories, the data requested belonging to a second category of
5 the plurality of categories, which instructions, when executed by one or more processors,
6 cause the one or more processors to carry out the steps of:

7 generating and storing a first concept in association with a first relationship of a first
8 relationship type and a second relationship of a second relationship type; and
9 responding to the request based on the first concept and the second relationship,

10 wherein,

11 the first concept is one of a plurality of atomic concepts among the data
12 managed by the server,

13 the first concept is associated with the first category of the plurality of
14 categories;

15 the first relationship type relates at least two concepts of the plurality of
16 atomic concepts associated with the first category, and

17 the second relationship type relates at least one of the two concepts related by
18 the first relationship with at least one concept of the plurality of atomic
19 concepts associated with the second category of the plurality of
20 categories.

1 48. A computer-readable medium carrying one or more sequences of instructions for
2 processing enterprise data generated by an enterprise, which instructions, when executed by
3 one or more processors, cause the one or more processors to carry out the step of:

4 generating and storing a first concept in association with a first relationship of a first
5 relationship type and a second relationship of a second relationship type,

6 wherein,

7 the first concept is one of a plurality of atomic concepts within the enterprise
8 data,

9 the first concept is associated with a first category of a plurality of categories
10 that encompass the enterprise data;
11 the first relationship type relates at least two concepts of the plurality of
12 atomic concepts associated with the first category, and
13 the second relationship type relates at least one of the two concepts related by
14 the first relationship with at least one different concept of the plurality
15 of atomic concepts.

1 49. A computer-readable medium carrying one or more sequences of instructions for
2 processing enterprise data generated by an enterprise, which instructions, when executed by
3 one or more processors, cause the one or more processors to carry out the steps of:
4 generating a plurality of categories that encompass the enterprise data;
5 generating a plurality of atomic concepts within the enterprise data;
6 generating a first relationship type to relate at least two concepts of the plurality of
7 atomic concepts associated with a first category of the plurality of categories;
8 generating a second relationship type to relate at least one of the at least two concepts
9 related by the first relationship type to at least one different concept of the
10 plurality of atomic concepts;
11 storing a first concept of the plurality of atomic concepts, said first concept associated
12 with the first category;
13 generating a first relationship of the first relationship type with the first concept;
14 generating a second relationship of the second relationship type with the first concept;
15 and
16 storing the first relationship and the second relationship in association with the first
17 concept.

1 50. A system for responding to a request for data from a server operated by an enterprise
2 on a network, the request based on an enterprise-specific vocabulary of names and
3 relationships among the names, the names naming enterprise products and services and
4 activities and data, comprising:

5 a means for generating and storing a first concept in association with a first
6 relationship of a first relationship type and a second relationship of a second
7 relationship type; and

8 a means for responding to the request based on the first concept and the second
9 relationship,

10 wherein,

11 the first concept is one of a plurality of atomic concepts among names in the
12 enterprise-specific vocabulary,

13 the first concept is associated with a first category of a plurality of categories
14 that encompass the enterprise-specific vocabulary;

15 the first relationship type relates at least two concepts of the plurality of
16 atomic concepts associated with the first category, and

17 the second relationship type relates at least one of the two concepts related by
18 the first relationship with at least one different concept of the plurality
19 of atomic concepts.

1 51. A system for responding to a request for data from a server operated by an enterprise,
2 the server managing data comprising a plurality of categories of information, the request
3 based on a value in a first category of the plurality of categories, the data requested belonging
4 to a second category of the plurality of categories, comprising:

5 a means for generating and storing a first concept in association with a first
6 relationship of a first relationship type and a second relationship of a second
7 relationship type; and

8 a means for responding to the request based on the first concept and the second
9 relationship,

10 wherein,

11 the first concept is one of a plurality of atomic concepts among the data
12 managed by the server,
13 the first concept is associated with the first category of the plurality of
14 categories;
15 the first relationship type relates at least two concepts of the plurality of
16 atomic concepts associated with the first category, and
17 the second relationship type relates at least one of the two concepts related by
18 the first relationship with at least one concept of the plurality of atomic
19 concepts associated with the second category of the plurality of
20 categories.

52. A system for processing enterprise data generated by an enterprise, comprising:
a means for generating and storing a first concept in association with a first
relationship of a first relationship type and a second relationship of a second
relationship type; and
a means for processing some of the enterprise data based on the first concept and the
second relationship,
wherein,
the first concept is one of a plurality of atomic concepts within the enterprise
data,
the first concept is associated with a first category of a plurality of categories
that encompass the enterprise data;
the first relationship type relates at least two concepts of the plurality of
atomic concepts associated with the first category, and
the second relationship type relates at least one of the two concepts related by
the first relationship with at least one different concept of the plurality
of atomic concepts.

53. A system for processing enterprise data generated by an enterprise, comprising:
a means for generating a plurality of categories that encompass the enterprise data;
a means for generating a plurality of atomic concepts within the enterprise data;

- 4 a means for generating a first relationship type to relate at least two concepts of the
- 5 plurality of atomic concepts associated with a first category of the plurality of
- 6 categories;
- 7 a means for generating a second relationship type to relate at least one of the at least
- 8 two concepts related by the first relationship type to at least one different
- 9 concept of the plurality of atomic concepts;
- 10 a means for storing a first concept of the plurality of atomic concepts, said first
- 11 concept associated with the first category;
- 12 a means for generating a first relationship of the first relationship type with the first
- 13 concept;
- 14 a means for generating a second relationship of the second relationship type with the
- 15 first concept; and
- 16 a means for storing the first relationship and the second relationship in association
- 17 with the first concept.

- 1 54. A system for responding to a request for data from a server operated by an enterprise
- 2 on a network, the request based on an enterprise-specific vocabulary of names and
- 3 relationships among the names, the names naming enterprise products and services and
- 4 activities and data, the system comprising:
- 5 a database for storing a first concept in association with a first relationship of a first
- 6 relationship type and a second relationship of a second relationship type; and
- 7 a processor configured as an applications programming interface for responding to the
- 8 request based on the first concept and the second relationship,
- 9 wherein,
- 10 the first concept is one of a plurality of atomic concepts among names in the
- 11 enterprise-specific vocabulary,
- 12 the first concept is associated with a first category of a plurality of categories
- 13 that encompass the enterprise-specific vocabulary;
- 14 the first relationship type relates at least two concepts of the plurality of
- 15 atomic concepts associated with the first category, and

16 the second relationship type relates at least one of the two concepts related by
17 the first relationship with at least one different concept of the plurality
18 of atomic concepts.

1 55. A system for responding to a request for data from a server operated by an enterprise,
2 the server managing data comprising a plurality of categories of information, the request
3 based on a value in a first category of the plurality of categories, the data requested belonging
4 to a second category of the plurality of categories, the system comprising:
5 a database for storing a first concept in association with a first relationship of a first
6 relationship type and a second relationship of a second relationship type; and
7 a processor configured as an application program interface for responding to the
8 request based on the first concept and the second relationship,
9 wherein,
10 the first concept is one of a plurality of atomic concepts among the data
11 managed by the server,
12 the first concept is associated with the first category of the plurality of
13 categories;
14 the first relationship type relates at least two concepts of the plurality of
15 atomic concepts associated with the first category, and
16 the second relationship type relates at least one of the two concepts related by
17 the first relationship with at least one concept of the plurality of atomic
18 concepts associated with the second category of the plurality of
19 categories.

1 56. A system for processing enterprise data generated by an enterprise, comprising:
2 a database for storing a first concept in association with a first relationship of a first
3 relationship type and a second relationship of a second relationship type; and
4 a processor configured as an application program interface for responding to a request
5 from a client process for processing some of the enterprise data based on the
6 first concept and the second relationship,
7 wherein,

8 the first concept is one of a plurality of atomic concepts within the enterprise
9 data,
10 the first concept is associated with a first category of a plurality of categories
11 that encompass the enterprise data;
12 the first relationship type relates at least two concepts of the plurality of
13 atomic concepts associated with the first category, and
14 the second relationship type relates at least one of the two concepts related by
15 the first relationship with at least one different concept of the plurality
16 of atomic concepts.

1 57. A system for processing enterprise data generated by an enterprise, comprising:
2 a computer readable persistent storage medium; and
3 a processor configured for
4 generating a plurality of categories that encompass the enterprise data,
5 generating a plurality of atomic concepts within the enterprise data,
6 generating a first relationship type to relate at least two concepts of the
7 plurality of atomic concepts associated with a first category of the
8 plurality of categories,
9 generating a second relationship type to relate at least one of the at least two
10 concepts related by the first relationship type to at least one different
11 concept of the plurality of atomic concepts,
12 generating a first relationship of the first relationship type with the first
13 concept,
14 generating a second relationship of the second relationship type with the first
15 concept,
16 storing on the persistent storage medium a first concept of the plurality of
17 atomic concepts, said first concept associated with the first category,
18 and
19 storing on the persistent storage medium the first relationship and the second
20 relationship in association with the first concept.